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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,406	07/26/2001	Andrea Giovanni Cigada	853063.493	1065

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EXAMINER

VU, QUANG D

ART UNIT PAPER NUMBER

2811

DATE MAILED: 02/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/917,406

Applicant(s)

CIGADA ET AL.

Examiner

Quang D Vu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed on 11/27/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-26 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “mold having at least one air vent” must be shown or the feature(s) canceled from the claim(s). The drawing also needs to show that conductive strips extending upwardly from the surface in claim 16 and the hole in claims 17 and 22. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

The specification never discloses the diameter of the circular section of the through hole is equal to or shorter than that of the air vent as claimed in claim 3.

The specification never discloses a plurality of conductive strips extending upwardly from the surface as claimed in claim 16.

The specification never discloses the hole is a recess formed in a surface of the conductive strip as claimed in claim 17.

The specification never discloses the hole is spaced a predetermined distance away from the peripheral extrusion area as claimed in claim 22.

Claim Objections

Claim 1 is objected to because of the following informalities: Since the claim is directed to a lead frame and a mold that covers the lead frame, the preamble of the claim should be changed to "A structure comprising:". Appropriate correction is required.

Claim 8 is objected to because of the following informalities: Since the claim is directed to a lead frame and a mold that covers the lead frame, the preamble of the claim should be changed to "A structure comprising:". Appropriate correction is required.

Claim 16 is objected to because of the following informalities: In line 5, the phrase "...the conductive strips defining an air vent..." should be change to "...each of the conductive strips defining an air vent...". Appropriate correction is required.

Claim 23 is objected to because of the following informalities: In line 4, the phrase "...a molded portion..." should be change to "...said molded portion...". In line 5, the phrase "...having one or more flashing portions..." should be change to "...having said one or more flashing portions...". Appropriate correction is required.

Claim 24 is objected to because of the following informalities: In line 1, the phrase "...a flashing portion..." should be change to "...one of said one or more flashing portions...". Appropriate correction is required.

Claim 24 is objected to because of the following informalities: In line 2, the term "receptacle" has no antecedent basis. The phrase "...the receptacle" should be change to "...the hole...".

Claim 25 is objected to because of the following informalities: In line 3, the phrase "...the flashing portion..." should be change to "...said one of said one or more flashing portions...". Appropriate correction is required.

Claim 26 is objected to because of the following informalities: In line 1, the phrase "...the flashing portion..." should be change to "...said one of said one or more flashing portions...". Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-7 and 16-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, in lines 4-5, the phrase "said air vent being positioned between an upper and a lower surface of said frame..." is unclear. The specification discloses a hole [8] formed between the upper and lower surfaces of the frame. The specification never discloses the air vent being positioned between an upper and a lower surface of the frame.

Claim 1, in line 5, the phrase "...a through hole placed..." is unclear as to where is the through hole: It is being referred to the through hole [8] of the lead frame in fig. 3?

Claim 4, in lines 1-2, the phrase "...said air vent by means of said hole having..." is unclear as to what is it meant. The air vent is directed to a structure in the mold to make the flash and a through hole is a hole in the lead frame.

Claim 16, in line 3, the phrase "...peripheral extrusion areas..." is unclear as to where is the peripheral extrusion areas in the molded portion.

Claim 24, in lines 1-3, the phrase "a flashing portion... molded portion" is unclear. The specification discloses the flashing portion is extending on a surface of the conductive strip and away from the molded portion. The specification also discloses the hole extend through the conductive strip and facing away from the molded portion.

Claim 26, in line 2, the phrase "the flashing portion...the conductive strip facing toward the molded portion" is unclear. Figure 6 shows the flashing portion [13] forms a button portion on a surface of the conductive strip facing toward the flashing portion [12]. The phrase "the flashing portion...the conductive strip facing toward the molded portion" should be change to "one of said one or more flashing portion forms a button portion on a surface of the conductive strip facing toward the other of said one of said one or more said flashing portion".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

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(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 8-10 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,469,369 to Lee.

Regarding claim 8, Lee (figures 3-4) teaches an integrated circuit, comprising:

a semiconductor device;

a flashing portion (a portion of the mold compound [250] formed in the groove [160] and formed on the lead frame [100] between the groove [160] and the inlet of the upper mold [240]) of molded material extruded from a molded portion at a peripheral area thereof;

and a lead-frame (100) external to the molded portion and having a hole (160) adjacent to the peripheral area of the molded portion having the flashing portion extruded therefrom, the flashing portion at least partially filling the hole (160).

It is inherent that the molded portion formed around the semiconductor device because it protects the semiconductor device.

Regarding claim 9, Lee inherently teaches the hole (160) is formed on an axis passing through the flashing portion.

Regarding claim 10, Lee teaches the hole (160) is a through-hole extending completely through the lead-frame (100).

Regarding claim 12, Lee teaches the hole (160) is a recess formed in the lead frame (100).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,469,369 to Lee.

Regarding claim 13, Lee differs from the claimed invention by not showing the hole is substantially round in shape. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the hole is substantially round in shape because it improves the adhesion between the encapsulant material and the lead frame.

Regarding claim 14, Lee differs from the claimed invention by not showing the hole is substantially elliptical in shape. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the hole is substantially elliptical in shape because it improves the adhesion between the encapsulant material and the lead frame.

Regarding claim 15, Lee teaches the hole is spaced a predetermined distance away from the extrusion of the flashing portion from the molded portion.

Allowable Subject Matter

Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang D Vu whose telephone number is 703-305-3826. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

qv
February 24, 2003

Steven Loh